

CANITIES.

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**S**YNONYMS :—Trichonosis cana ; Trichonosis discolor ; Poliothrix Poliosis ; Trichonosis poliosis ; Trichosis poliosis ; Spilosis poliosis ; Polioties ; Grayness of the hair ; Whiteness of the hair ; Blanching of the hair ; Atrophy of the hair pigment.

Grayness or whiteness of the hair may be congenital or acquired ; and of these, the latter is by far the most common. The whiteness is either partial or complete.

*Congenital canities* usually occurs in the form of tufts, sometimes in round patches, the more or less pure white hair showing conspicuously amongst the normal-colored mass. When the whiteness is general, we have albinism which is associated with a deficiency of pigment in the whole body. Cases of congenital canities are rare.

*Acquired canities* may be premature or senile. Most often grayness does not begin before the thirty-fifth or fortieth year. If it occurs before this age, it may be considered as premature ; and when after this age, as senile. Premature canities is by no means uncommon, many persons becoming gray between the twentieth and twenty-fifth year. The hair which, as a rule, first whitens is that of the temples ; then follows, with more or less rapidity, that of the vertex and whole head. Sometimes the beard first turns gray, but usually it changes color after the hair of the scalp. The last hair to become gray is that of the axillæ and pubis. When the graying is due to some passing cause, as anxiety or some diseased state, the process may cease completely upon removal of the cause. Instances have been noted of normally-colored hair growing in after the fall of the white hair, but usually the whiteness is permanent. When graying of the hair is due to senile changes, it is progressive and permanent. As a rule, there is no change in the color of the scalp, though in some cases gray tufts are found upon pale-yellow patches of scalp. As in alopecia, so in canities, men are more frequently affected than women.

The hair in canities is usually unchanged except in color, but it may be drier and stiffer than normal. Canities may exist for years without alopecia. In the senile form alopecia is apt to come on as another senile change ; alopecia senilis, as is well known, is generally preceded by canities. According to Landois, incipient baldness usually follows senile canities in from one to five years.

The hair turns gray first at its root, and not at its point, as has been maintained. The color at first is gray on account of the mixture of the normal color and the whiteness due to the absence of pigment. Gradually, the white parts gain the ascendant, and the whole hair is blanched, becoming finally of a yellowish or snowy whiteness. The darker the hair is originally the more it is prone to turn gray.

Sudden change of color of the hair from its normal hue to perfect white has been too well authenticated to allow of a doubt as to its occurrence, though it has been denied by good authorities, who have questioned the correctness of the observations reported.

Leonard<sup>1</sup> gives a long list of cases, including those of Marie Antoinette, Mary, queen of Scots, and others. Landois<sup>2</sup> reports fully a case of this sort observed by himself. It occurred in the person of a man, thirty-four years of age, who was admitted to the hospital suffering with delirium tremens. His delirium took the form of great terror whenever any one approached him. On admission, his hair was of blond hue, and was so up to the evening of the third day. On the morning of the fourth day, the hair both of the beard and scalp was noticed to have become gray. Some of the hairs were white from root to point, some only at their roots, some only at their points, while some were white and blond at different points. A careful perusal of the reported cases will be sufficient to convince one of the reality of sudden blanching of the hair.

*Ringed hair* is an anomalous variety of blanching of the hair in which the affected hairs are marked by alternate rings, one being that of the normal color, and the next white. The occurrence of this disease is very rare, and but few cases have been reported.<sup>3</sup> In Wilson's case, the disease had been progressive for six years and affected only the scalp hair. The white portions occupied the entire diameter and were opaque by transmitted light.

The hair has been known to lose its color under varying circumstances. Thus Wallenberg<sup>4</sup> reports a case in which, after an attack of scarlatina, the patient's brown hair was entirely lost and replaced by a growth of white hair. Prolonged residence in a cold climate, with much exposure, will cause the hair to turn gray. Sometimes the hair will change its color with the season, becoming gray in winter and darker in summer.<sup>5</sup> On the other hand, Cottle<sup>6</sup> gives prolonged residence in hot

<sup>1</sup> "The Hair, its Diseases, and Treatment." Detroit, 1881.

<sup>2</sup> Virchow's Archives, 1866, xxxv., 575.

<sup>3</sup> Wilson, E., Tr. Roy. Soc., 1867; also see "Healthy Skin," London, 1876, p. 109.

<sup>4</sup> Arch. f. Derm. und Syph., 1876, Heft 1.

<sup>5</sup> Wilson, Lect. on Dermat., 1878, p. 171.

<sup>6</sup> "The Hair in Health and Disease," London, 1877.



climates, with much exposure, as a cause of canities. Albinoes, we know, are most frequent in the negro races, which inhabit the hot countries.

*Etiology and Pathology.*—Senile canities and many cases of the premature form are due to an obscure change in the nutrition of the hair papillæ which interferes with the production of pigment. Whatever the nature of the change may be, only this function of the papillæ seems to be interfered with, as the hair-forming function is in full activity, judging from the fact that the hair in many cases is in full vigor. The hair depends, for its shade of color, upon the color of the hair cells, upon the color of the hair pigment, and upon the amount of air contained between the hair cells. It is from the outer layers of the hair that it chiefly takes its color tone. Thus often under the microscope a large amount of pigment cells will be found in the medulla of a hair that appears white. In cases of sudden blanching of the hair, the change of color is dependent upon the formation of air bubbles between the hair cells of the cortical substance, the presence of the air rendering the cortical substance opaque, so that the color of the pigment is obscured. If one of these hairs is placed in hot water, ether, or turpentine, the air bubbles will be driven out, and the hair will reassume its normal color. This same infiltration of the hair with air will be found also in some cases of ordinary premature canities, though most of such cases are due, as above stated, to interference with the production of pigment. According to Pincus,<sup>1</sup> in the beginning of canities the pigment slowly leaves the middle layers of the papillæ and remains alone in the external layers. With the increase of the canities, only a portion of the external layer of the papillæ will produce pigment, which in straight hairs will run in streaks parallel to the long axis of the hair, and in curly hairs will run in a spiral. The blending of the colored and uncolored streaks will produce the gray color, which will gradually change to white as the pigment is less and less produced. There are various agents which act as active or exciting causes of canities. Age is one of the most prominent of these. Heredity exerts marked influence upon the blanching of the hair, most of the members of certain families turning gray at an early period of life. Neuralgia of the fifth nerve, dyspepsia of various forms, sudden fear or nervous shock (producing sudden blanching of the hair), abundant and frequent hemorrhage, excesses of all kinds, chronic debilitating diseases (as syphilis, malaria, and phthisis), local diseases or injuries to the scalp, as wounds, favus, repeated epilation, prolonged shaving, and the like, have been given by various writers as causes of canities. Schwimmer regards it as being principally a tropho-neurosis, and finds in the occurrence of grayness in the course of neuralgia a strong argument for his theory.

<sup>1</sup> Arch. für Derm. und Syph., 1872, ii., 1.

The cause of "ringed hair" is ascribed by Wilson to the development of a gaseous fluid within the hair, and he thinks that either the white, opaque and smaller segments were developed during the night, and the larger and normal segments grew during the day; or, the separate segments were the product of alternate days. The gas may have been generated at the time of the formation of the abnormal segment, or the cells which composed that segment may have been originally filled with an aqueous fluid which evaporated quickly, and was replaced by air penetrating from without. Landois<sup>1</sup> does not think that the white places are the products of the growth by night, and the dark by day; nor that the white places were due to drying of the hair elements. He believes that we must assume an intermittent activity of the trophic or vaso-motor nerves of the papillæ through whose influence a hair tissue is formed, in which a periodic development of gas takes place. The solution of the question is still in abeyance.

*Treatment.*—We cannot restore the color to gray hairs. In some cases of canities occurring in the course of neuralgias, if we can cure the neuralgia, the color will gradually return to the hair.

All that can be done for canities is to artificially restore the color by means of hair dyes; and their use is to be deprecated. Happily the custom of dyeing the hair is falling out of fashion. We append a few formulæ for hair dyes, selected out of many.

*Hair Dyes.*—Hebra and Kaposi give directions for the process of dyeing the hair black by "Henna." This is made into a paste with water and spread upon the hair. In an hour the hair will be red. Then a paste is applied to the hair made from powdered indigo plant. Then damp heat is applied, and in a few hours, if experience and good judgment have regulated the process, the hair will have a fine, black color.

Leonard gives the following preparations for dyeing the hair black:

No. 1.

R Bismuthi citratis. . . . .	℥ i. = 32.
Aquæ rosæ,	
Aquæ destillat. . . . .	āā ℥ ij. = 64.
Alcoholis. . . . .	℥ v. = 20.
Ammonię . . . . .	q. s. = q. s.

Sig. Apply in the morning.

No. 2.

R Sodii hyposulphit. . . . .	℥ xij. = 48. (60.)
Aquæ destil. . . . .	℥ iv. = 128. (140.)

Sig. Apply in the evening thoroughly to the hair.

Nitrate of silver may be used in the strength of from five to ten grains to the ounce, saturating the hair with a solution, and allowing it to

<sup>1</sup> Virchow's Archiv, 1869, xlv., 113.



dry in the sun, or in the light in a warm room. If it is wished to hasten the process, an application of sulphuret of potash, of twenty grains to two drachms to the ounce of distilled water, will cause the dye to set instantly. Gloves should be worn when applying this dye, and a brush used to lay it on.

Lead may be used in the form of the sugar of lead, ten to twenty grains to the ounce of water, applied to the hair, and when about to dry following it up with a solution of sulphide of ammonium about one-quarter the strength of that of the British Pharmacopœia.

Mercury may be used in the form of the bichloride three grains to the ounce of water brushed through the hair and followed when dry with a solution of hyposulphite of soda, one ounce to two ounces of water. The last two dies are dangerous. For a brown dye, Pfaff recommends a pomade composed as follows :

℞	Ol. ovorum rec. press.,	
	Med. oss. bovis.....	āā 50.
	Ferri lact. ....	2.50.
	Ol. cassiæ ether.....	1.50.

The number of dyes is legion, and the above must suffice as examples. Before the application of any die, the hair should be thoroughly cleansed with soap and water.





